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Model No. ST100
VTR CONTROLLER

For
Version 6.x and 7.x Units

USER MANUAL

Rev 3.12

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1. REVISION HISTORY

061703	Rev. 3.0	Company header information revised.
010504	Rev. 3.1	Added DNF Controls Limited Warranty.
102506	Rev. 3.11	Added "time type" select function.
012610	Rev 3.12	Added XDCAM functions (ST100-SXD)

Getting Started . . .

2. DESCRIPTION

The ST100 UNIVERSAL Controller provides low cost control over a wide range of RS422 VTR and DDR formats and brands in your facility.

Simple and easy to use.

No complicated menus to search through.

All the functions you need at the press of a button. Eliminates the need for multiple remote controllers and the associated clutter of several pieces of control hardware.

a. FEATURES

Timecode/tape time display; Jog/Shuttle Wheel.

12-function keypad provides the functions you need at the press of a button.

Small footprint desktop unit, 8 ½" x 5 ½".

Can be easily customized for your specific needs. Customize the ST100 with the transport control functions and status indicators you require for your specific applications.

Can be used through your facility's existing RS422 Control router, RS422 patch bay or 9-pin switch box.

b. TIME CODE DISPLAY

Display Timecode or CTL Tape Timer per the mode selector switch on the front panel of the VTR. The Time Mode can be selected manually by pressing the **[SHIFT]** + **[JOG]** keys, each press will step to the next Time Mode: CTL Tape Time, Timecode, VITC.

c. STANDARD FUNCTIONS

RECORD
PLAY
STOP
REWIND
FAST FORWARD
JOG/SHUTTLE MODE SELECT

NOTE: JOG & SHUTTLE WHEEL - Active ONLY from STOP/STILL or JOG/SHUTTLE modes.

d. REAL-TIME STATUS INDICATORS: ACTIVE ON

RECORD
PLAY
STOP/STILL
REWIND/REVERSE
FAST FORWARD/FORWARD
JOG MODE SELECTED

3. INSTALLATION

a. Plug one end of a 9-conductor, RS422 serial cable into the 9-pin connector on the rear of the ST100. Plug the other end of the cable into the 9-pin remote connector on the VTR.

b. Plug the 9-pin D-female connector on the POWER SUPPLY into the male 9-pin connector on the rear of the ST100.

Plug the AC connector into a wall outlet, 90 VAC - 265 VAC, 50-60 Hz.

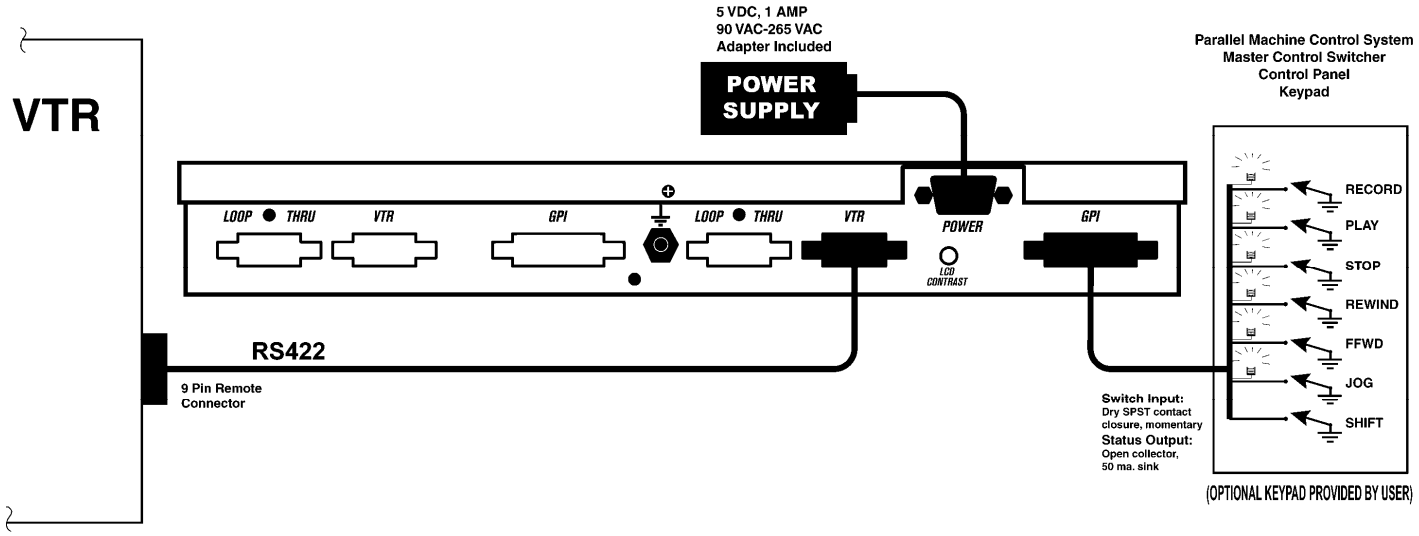
c. Select REMOTE operation on the VTR's front panel.

d. Set the RECORD SELECTOR SWITCHES, located on the rear panel of the ST100, to the desired record mode per the “RECORD SELECTOR CHART.”

Installation is completed.

NOTE: For AMPEX 1-inch and D2 VTRs, set VTR ID to 0001.

Connection Diagram



NOTE: Rack mount version shown with Optional User Supplied external GPI switch inputs and tally outputs. Tabletop version uses the same connections.

4. OPERATION

Select the desired transport function by pressing the appropriate switch on the front of the ST100.

The Real-Time Status Indicators will light to indicate the VTRs current tape transport mode.

For example: Pressing **[PLAY]** will put the VTR into the PLAY mode.
The PLAY Status Indicator will light when the VTR is in PLAY mode.

Loss of serial communication with the VTR is indicated by ALL status LEDs turning ON.
Selecting LOCAL control on the VTR's front panel will turn OFF all status LEDs.

a. RECORD MODE

Four (4) record modes are available:
Crash Record (Full Record), Assemble Record, Insert Record and Record Lockout.

Press only the **[RECORD]** switch to activate the selected Record mode.
The Record Status Indicator will light when the VTR is in RECORD mode.

NOTE: The VTR will not go into Record mode if "Record Inhibit" is enabled on the VTR or tape cassette.

b. RECORD SELECTOR SWITCHES

Mode	**S1**	**S2**	**S3**	**S4**	**S5**	**S6**
Record Lockout	OFF	OFF	OFF	OFF	OFF	OFF
Assemble Record	ON	OFF	OFF	OFF	OFF	OFF
Crash Record	OFF	ON	OFF	OFF	OFF	OFF
Insert Record	ON	VID	AUD1	AUD2	AUD3	AUD4 Active On

NOTE: AUD3 & AUD4 should be ON ONLY for VTRs that support 4 channels of audio, i.e.: D1-, D2- and D3-type VTRs.

c. TIME CODE DISPLAY

Display Timecode or CTL Tape Timer per the mode selector switch on the front panel of the VTR. The Time Mode can be selected manually by pressing the **[SHIFT]** + **[JOG]** keys, each press will step to the next Time Mode: CTL Tape Time, Timecode, VITC.

5. ST100-SXD FUNCTIONS

The ST100-SXD is designed to work specifically with the Sony XDCAM. The ST100-SXD includes support for clip access commands.

a. GO TO FIRST CLIP

Press **[SHIFT] + [PLAY]** to go to the beginning of the first clip.

b. GO TO LAST CLIP

Press **[SHIFT] + [STOP]** to go to the end of the last clip.

c. GO TO PREVIOUS CLIP

Press **[SHIFT] + [REWIND]** to go to the beginning of the previous clip.

d. GO TO NEXT CLIP

Press **[SHIFT] + [FFWD]** to go to the beginning of the next clip.

Reference . . .

6. SPECIFICATIONS

FRONT PANEL

6 Status LEDs	Record, Play, Stop, Rewind, FFwd, Jog
1 Power LED	
3 Direction LEDs	Indicates direction of Jog Shuttle
Switches	Record, Play, Stop, Rewind, Fast Forward, Jog, Shift, Reset
DIP Switches	RECORD MODE: Lockout, Crash, Insert, Assemble
Display	2-Line LCD, back-lit with adjustable contrast
Jog/Shuttle Wheel	
Size	19” x 5” x 1-3/4” (Rack mount) 7” x 5” x 1-1/2” (Tabletop)
Weight	2 lbs.

REAR PANEL CONNECTORS

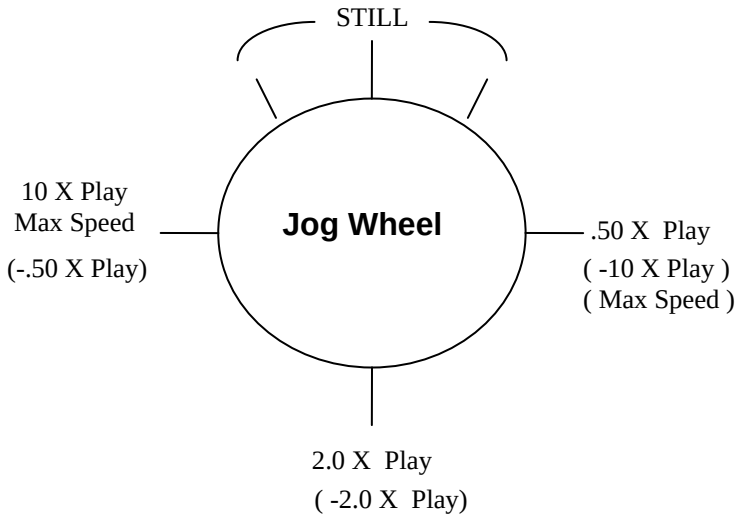
RS422 Serial Out	9-pin D-type connector, female (DB9-F)
Power:	5 volt D.C., 500 ma. 90-265 VAC, 50/60 Hz converter supplied (Rack mount or tabletop)
GPI	15-pin D-type connector, female (DB15F) Switch Input: SPST contact closure, momentary
Status Output:	Open collector, sink 50mA.

RS422 SERIAL CONNECTOR
9-Pin D-Type, Female (DB9-F)

Pin #				
	1	Frame Ground	6	Receive Common
	2	Receive A ←	7	Receive B ←
	3	Transmit B →	8	Transmit A →
	4	Transmit Common	9	Frame Ground
	5	Spare		

SHUTTLE WHEEL SPEEDS

Note: ( ) represents Shuttle speeds in reverse direction



GPI CONNECTOR – Version 6.x Software
15-Pin D-Type, Female (DB15-F)

Version 6.x Software (Rev. 4.x Hardware) ONLY

Pin #	Function	Note
1	+5VDC	Power for Status External Indicators
2	Switch #7, Shift Mode Select	Active Low (+5 Pull Up)
3	Led #1 drive, Record Status Indicator	Active Low, Open Collector Output
4	Led #2 drive, Play Status Indicator	" " "
5	Led #3 drive, Stop Status Indicator	" " "
6	Led #4 drive, Rewind Status Indicator	" " "
7	Led #5 drive, Fast Forward Status Indicator	" " "
8	Led #6 drive, Jog Mode Indicator	" " "
9	Command Common	
10	Switch #1, Record Command	Active Low (+5 Pull Up)
11	Switch #2, Play Command	Active Low (+5 Pull Up)
12	Switch #3, Stop Command	Active Low (+5 Pull Up)
13	Switch #4, Rewind Command	Active Low (+5 Pull Up)
14	Switch #5, Fast Forward Command	Active Low (+5 Pull Up)
15	Switch #6, Jog Mode Select	Active Low (+5 Pull Up)

GPI CONNECTOR – Version 7.x Software
26-Pin D-Type, Female (DB26F)

Version 7.x software (Rev. 5.x Hardware) ONLY

Pin #			Pin #		
	1	GPI 1 Out, Record tally		14	GPI 5 In, Fast Forward Command
	2	GPI 2 Out, Play tally		15	GPI 6 In, Standby ON Command
	3	GPI 3 Out, Stop tally		16	GPI 7 In, Pause Command
	4	GPI 4 Out, Rewind tally		17	GPI 8 In, None
	5	GPI 5 Out, Fast Forward Command		18	Common Ground
	6	GPI 6 Out, Standby		19	+ 5 VDC
	7	GPI 7 Out, Pause		20	+ 5 VDC
	8	GPI 8 Out, None		21	No Connection
	9	Common Ground		22	No Connection
	10	GPI 1 In, Record command		23	No Connection
	11	GPI 2 In, Play command		24	No Connection
	12	GPI 3 In, Stop Command		25	No Connection
	13	GPI 4 In, Rewind Command		26	No Connection

POWER SUPPLY CONNECTOR
9-Pin D-Type, Male (DB9M)

Pin #			Pin #		
	1	+5Vdc		6	+5Vdc
	2	+5Vdc		7	Ground
	3	Ground		8	Ground
	4	No connection		9	Ground
	5	No connection			

7. TABLE TOP REAR AND TOP VIEW

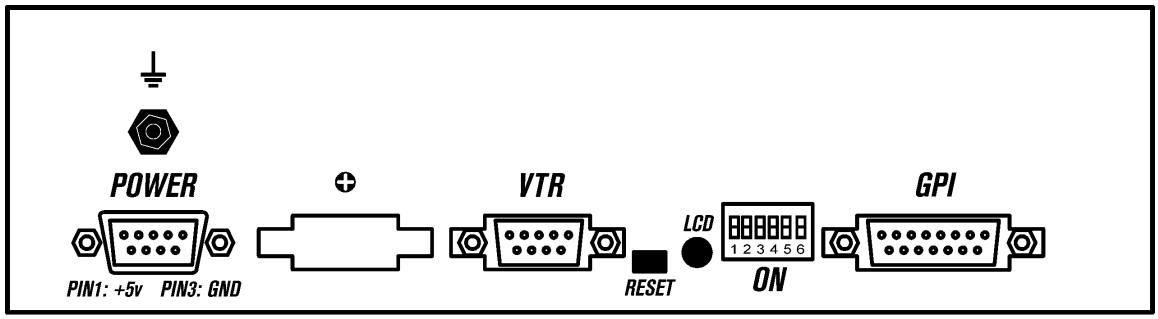


Table Top Rear View

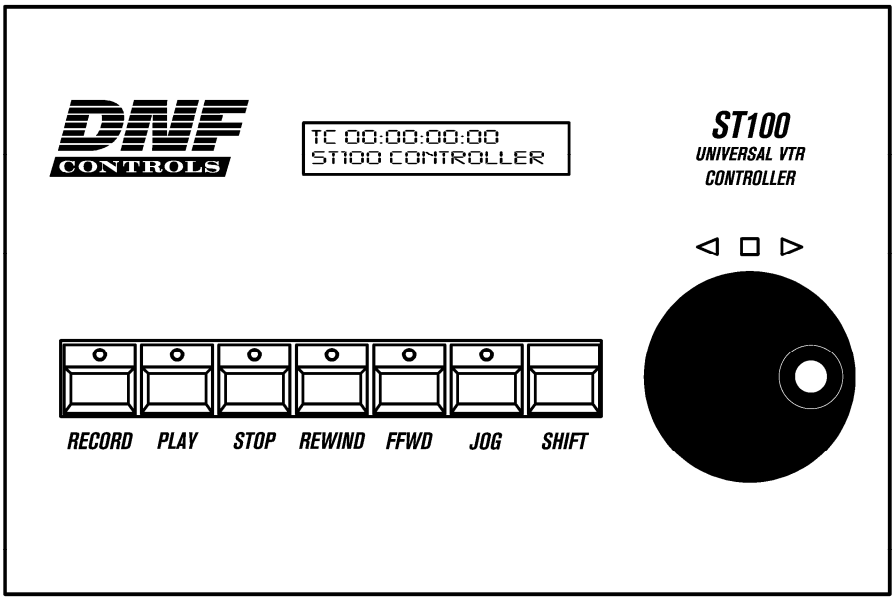
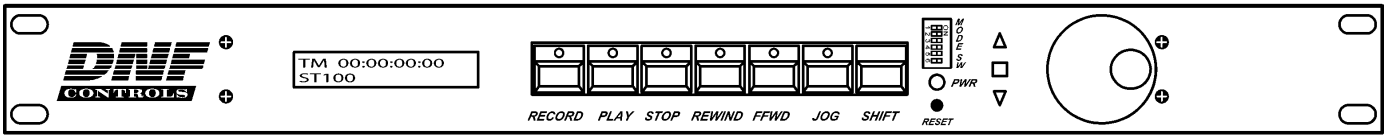


Table Top Top View

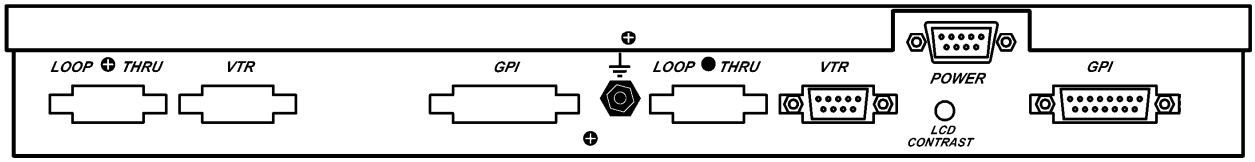
RACKMOUNT FRONT AND REAR VIEW

ST100-SRK (Single Rackmount with Keypad)

FRONT PANEL



REAR VIEW



8. DNF CONTROLS LIMITED WARRANTY

DNF Controls warrants its product to be free from defects in material and workmanship for a period of one (1) year from the date of sale to the original purchaser from DNF Controls.

In order to enforce the rights under this warranty, the customer must first contact DNF's Customer Support Department to afford the opportunity of identifying and fixing the problem without sending the unit in for repair. If DNF's Customer Support Department cannot fix the problem, the customer will be issued a Returned Merchandise Authorization number (RMA). The customer will then ship the defective product prepaid to DNF Controls with the RMA number clearly indicated on the customer's shipping document. The merchandise is to be shipped to:

DNF Controls
12843 Foothill Blvd., Suite D
Sylmar, CA 91342
USA

Failure to obtain a proper RMA number prior to returning the product may result in the return not being accepted, or in a charge for the required repair.

DNF Controls, at its option, will repair or replace the defective unit. DNF Controls will return the unit prepaid to the customer. The method of shipment is at the discretion of DNF Controls, principally UPS Ground for shipments within the United States of America. Shipments to international customers will be sent via air. Should a customer require the product to be returned in a more expeditious manner, the return shipment will be billed to their freight account.

This warranty will be considered null and void if accident, misuse, abuse, improper line voltage, fire, water, lightning or other acts of God damaged the product. All repair parts are to be supplied by DNF Controls, either directly or through its authorized dealer network. Similarly, any repair work not performed by either DNF Controls or its authorized dealer may void the warranty.

After the warranty period has expired, DNF Controls offers repair services at prices listed in the DNF Controls Price List. DNF Controls reserves the right to refuse repair of any unit outside the warranty period that is deemed non-repairable.

DNF Controls shall not be liable for direct, indirect, incidental, consequential or other types of damage resulting from the use of the product.

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